

REMARKS

Applicants thank the Examiner for the thorough examination given the present application.

Status of the Claims

Claims 1-7 and 9-18 will be pending in the above-identified application upon entry of the present amendment. Claims 1-7 are currently withdrawn from consideration. Claims 9-18 stand ready for further action on the merits. Claims 9-10 have been rewritten into independent form. Claim 8 has been cancelled herein. Claims 11 and 17-18 have been amended to place the claims in better form for prosecution. Thus, no new matter has been added. Based upon the above considerations, entry of the present amendment is respectfully requested.

In view of the following remarks, Applicants respectfully request that the Examiner withdraw all rejections and allow the currently pending claims.

Issues under 35 U.S.C. § 112, second paragraph

Claims 1-18 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. The Examiner cites various reasons for this rejection. Applicants respectfully traverse in view of the amended claims.

The pending claims have been amended herein in order to overcome the issues cited by the Examiner. As such, Applicants respectfully request that the rejection be withdrawn.

Issues under 35 U.S.C. § 102(e)

Claims 8 and 17-18 are rejected under 35 U.S.C. § 102(e) as being anticipated by Kudo et al. '538 (US 2003/0062538). Applicants respectfully traverse. Reconsideration and withdrawal of the outstanding rejection are respectfully requested based on the following considerations.

Legal Standard for Determining Anticipation

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "When a claim covers several structures or compositions, either generically or as alternatives, the claim is deemed anticipated if any of the structures or compositions within the scope of the claim is known in the prior art." *Brown v. 3M*, 265 F.3d 1349, 1351, 60 USPQ2d 1375, 1376 (Fed. Cir. 2001). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Distinctions over the Cited Reference

Claim 8 has been canceled herein, which renders the rejection moot as to this claim. Claim 17 has been amended to depend from claim 10, which was not included in the rejection. As such, Applicants respectfully submit that this amendment has rendered the rejection moot as to this claim as well.

Claim 18 recites the thickness of the InGaP layer or the InGaAsP buffer layer. Kudo et al. '538 fail to disclose this limitation. Should the Examiner disagree, Applicants respectfully request that the Examiner provide a specific citation in Kudo et al. '538 that discloses this limitation.

Accordingly, the present invention is not anticipated by Kudo et al. '538 since the reference does not teach or provide for each of the limitations recited in the pending claims.

Issues under 35 U.S.C. §103(a)

Claims 9-16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kudo et al. '538 in view of Ohkubo et al. '860 (US 5,492,860). Applicants respectfully traverse. Reconsideration and withdrawal of the outstanding rejection are respectfully requested based on the following considerations.

Legal Standard for Determining Prima Facie Obviousness

MPEP 2141 sets forth the guidelines in determining obviousness. First, the Examiner has to take into account the factual inquiries set forth in *Graham v. John Deere*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), which has provided the controlling framework for an obviousness analysis. The four *Graham* factors are:

- (a) determining the scope and content of the prior art;
- (b) ascertaining the differences between the prior art and the claims in issue;
- (c) resolving the level of ordinary skill in the pertinent art; and
- (d) evaluating any evidence of secondary considerations.

Graham v. John Deere, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966).

Second, the Examiner has to provide some rationale for determining obviousness. MPEP 2143 sets forth some rationales that were established in the recent decision of *KSR International Co. v Teleflex Inc.*, 82 USPQ2d 1385 (U.S. 2007). Exemplary rationales that may support a conclusion of obviousness include:

- (a) combining prior art elements according to known methods to yield predictable results;
- (b) simple substitution of one known element for another to obtain predictable results;
- (c) use of known technique to improve similar devices (methods, or products) in the same way;
- (d) applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;
- (e) “obvious to try” – choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success
- (f) known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations are predictable to one of ordinary skill in the art;
- (g) some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

As the MPEP directs, all claim limitations must be considered in view of the cited prior art in order to establish a *prima facie* case of obviousness. See MPEP 2143.03.

Distinctions over the Cited References

As the Examiner admits, Kudo et al. ‘538 do not disclose the temperature at which the layers grow. The Examiner relies on Ohkubo et al. ‘860 in order to overcome this deficiency.

However, the Ohkubo et al. '860 reference is related to a method for forming a compound semiconductor on a Si substrate. In contrast, the present invention is related to a method for forming a compound semiconductor on a GaAs substrate. As such, one of ordinary skill would not turn to Ohkubo et al. '860 for the temperature at which the layers grow since Ohkubo et al. '860 disclose an entirely different substrate from Kudo et al. '538 and the present invention.

Moreover, the Kudo et al. '538 reference is related to a method similar to the one disclosed on page 2, lines 12-24 of the present specification. Accordingly, it is difficult to reduce the thickness of the buffer layer by the method according to Kudo et al. '538.

As discussed above, the pending claims recite that the thickness of the buffer layer is not less than 5 nm and not greater than 500 nm. In claims 11, 12, and 18, the thickness of the buffer layer is clearly defined, which is neither anticipated nor made obvious by the cited references.

To establish a *prima facie* case of obviousness of a claimed invention, all of the claim limitations must be disclosed by the cited references. As discussed above, Kudo et al. '538 in view of Ohkubo et al. '860 fail to disclose all of the claim limitations of the pending claims. Accordingly, the combination of references does not render the present invention obvious.

Furthermore, the cited references or the knowledge in the art provide no reason or rationale that would allow one of ordinary skill in the art to arrive at the present invention as claimed. Therefore, a *prima facie* case of obviousness has not been established, and withdrawal of the outstanding rejection is respectfully requested. Any contentions of the USPTO to the contrary must be reconsidered at present.

Conclusion

Based upon the amendments and remarks presented herein, the Examiner is respectfully requested to issue a Notice of Allowance clearly indicating that each of the pending claims 9-18 is allowable under the provisions of Title 35 of the United States Code.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact John W. Bailey, Reg. No. 32,881, at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Director is hereby authorized in this, concurrent, and future replies to charge any fees required during the pendency of the above-identified application or credit any overpayment to Deposit Account No. 02-2448.

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Respectfully submitted,

By



John W. Bailey #58,258

John W. Bailey
Registration No.: 32,881
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road, Suite 100 East
P.O. Box 747
Falls Church, VA 22040-0747
703-205-8000